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(19) (CA) **APPLICATION FOR CANADIAN PATENT** (12)

(54) Catheter with Heat-Fused Balloon with Waist

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(30) (US) 07/381,878 1989/07/18

(57) 8 Claims

Notice: The specification contained herein as filed

Canada

CCA 3254 (10-89) 41

ABSTRACT OF THE DISCLOSURE

5 Disclosed is an everting balloon catheter in which the balloon
has a waist at the desired eversion point to minimize the size
of the distal tip of the catheter during insertion. Preferably,
the distal end of the outer body is bevelled and the waist is
located just distal and radial to the tip of the outer body when
10 the inner body is fully extended distal to the outer body.
Usually, the waist is formed by heat shrinking the balloon
during manufacture, thus usually increasing balloon thickness at
the waist.

15 Also, in the disclosed invention, the balloon is attached to the
outer catheter body via heat fusion. Generally, the outer body
and the balloon are both formed of compositions having at least
one component in common to promote heat fusion for attachment of
the balloon. Preferably that component is polyethylene.

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WHAT IS CLAIMED IS:

- 5 1. An everting balloon catheter having a distal tip and comprising:
 an outer tube having a distal end;
 an inner tube body having a distal end and coaxially disposed internal to the outer body; and
10 a balloon attached at one end to the distal end of the inner body and at the other to the distal end of the outer body, the balloon having a waist to minimize the size of the distal tip of the catheter when the balloon is inverted.
- 15 2. An everting balloon catheter according to claim 1 and wherein the distal end of the outer tube is bevelled and the waist is located just distal and radial to the outer tube when the inner body is fully extended within the outer body.
- 20 3. An everting balloon catheter according to claim 2 wherein the balloon has a proximal anchor portion and a distal extending portion and the waist defines the boundary between the two portions.
- 25 4. An everting balloon catheter according to claim 3 wherein the waist is formed by heat shrinking the balloon during manufacture to increase the balloon thickness and narrow the balloon diameter at the waist location.
- 30 5. An everting balloon catheter with an anchor annulus having the balloon attached to the outer body via heat fusion.

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5 6. An everting balloon catheter with an anchor annulus according to claim 5 and wherein the outer body and the balloon are both formed of compositions having at least one component in common to promote heat fusion for attachment of the balloon.

10 7. An everting balloon catheter with an anchor annulus according to claim 6 and wherein the component is selected from the group consisting of polyethylene, ethylene vinyl acetate copolymer, and Surlyn.

8. An everting balloon catheter with an anchor annulus according to claim 7 and wherein the component is polyethylene.

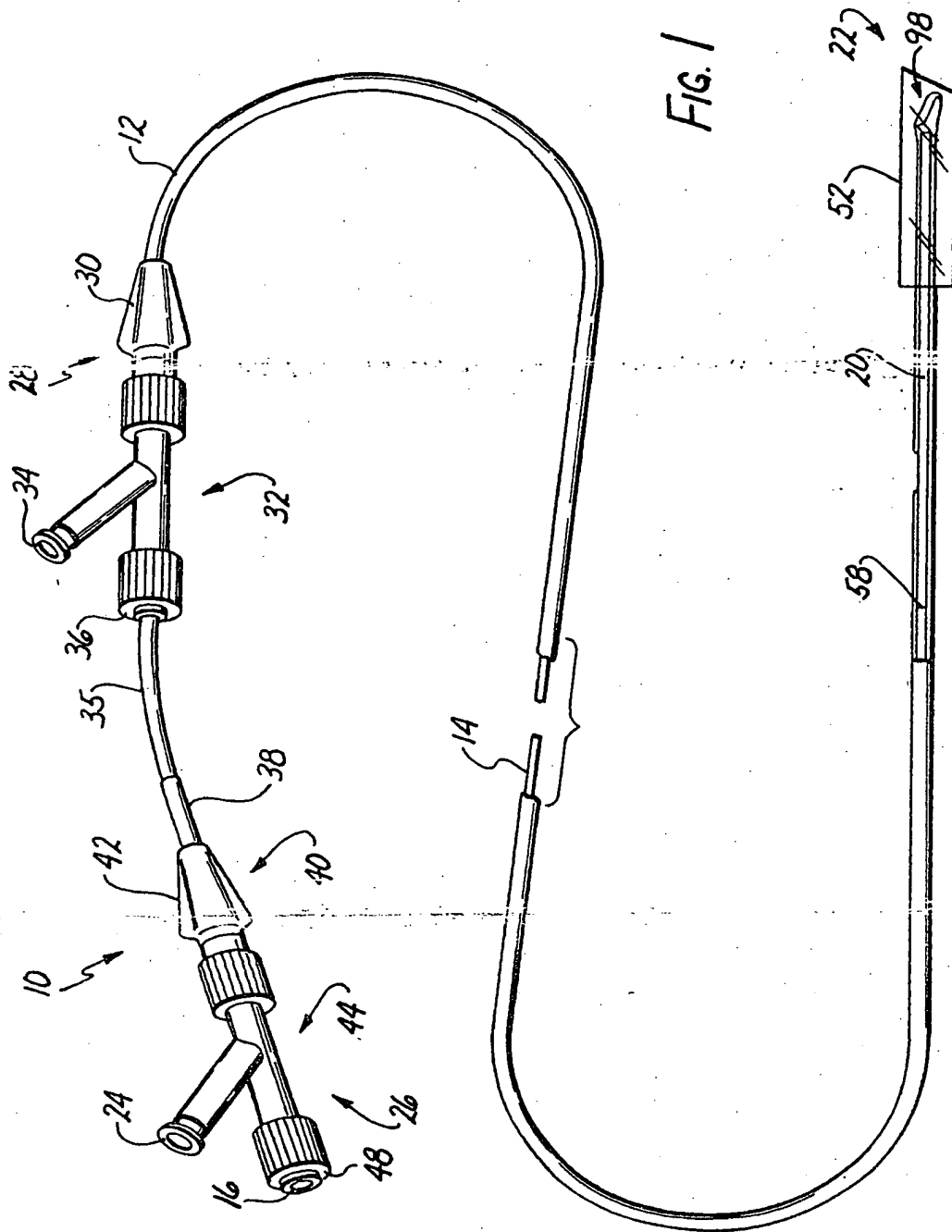
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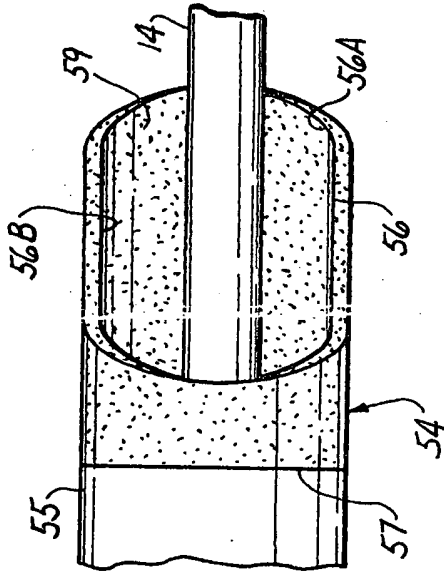


FIG. 3

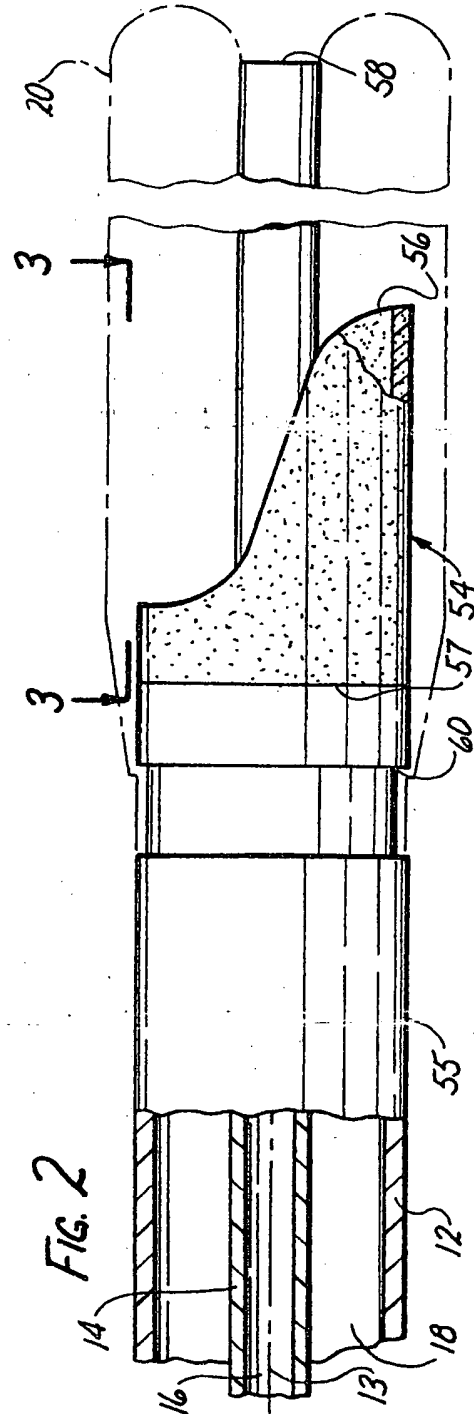


FIG. 2

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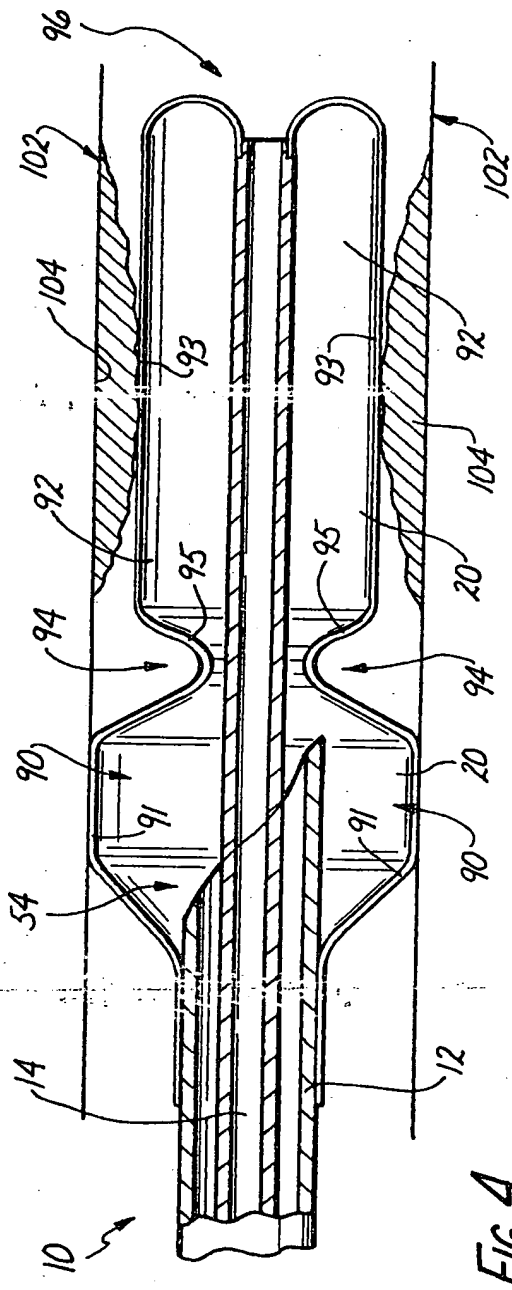


FIG. 4

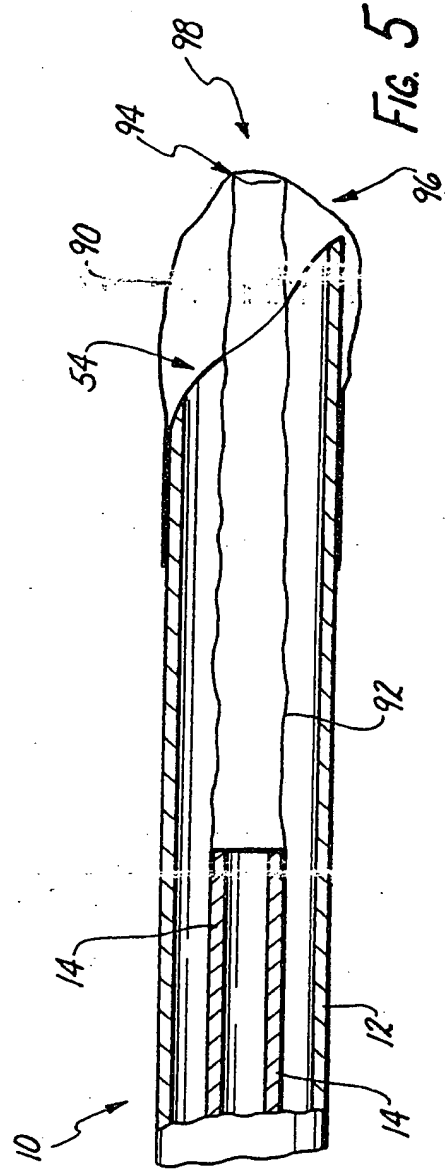


FIG. 5

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